CHLORINE FREE AND REDUCED CHLORINE CONTENT POLYMER AND RESIN COMPOSITIONS FOR ADHESION TO PLASTICS

ABSTRACT

The present invention provides a composition comprising one or more than one isotactic, modified polypropylene (MPP) or polypropylene-α-olefin copolymer (MPP copolymer) and one or more than one polymer or resin, wherein said MPP or MPP copolymer is modified with one or more than one carboxyl or anhydride, preferably maleic acid or anhydride, or with one or more than one epoxy or hydroxyl group. Alternatively, the present invention provides a composition comprising an adduct which is the reaction product of one or more than one isotactic, modified polypropylene (MPP) or isotactic, modified polypropylene-α-olefin copolymer (MPP copolymer) with one or more than one carboxyl, anhydride, epoxy or hydroxyl functional reactant, polymer or resin. The composition may be used to make aqueous or solvent borne compositions for making primers, coatings, powder coatings, films, laminates, moldings and shaped-articles having good adhesion to thermoplastic polyolefins (TPO) or polyolefin, while partly or wholly avoiding use of environmentally harmful chlorinated polyolefin (CPO) additives. The isotactic MPP or MPP copolymer preferably has one or two terminal carboxyl, anhydride, epoxy or hydroxyl group. More preferably, the isotactic MPP or MPP copolymer has a low molecular weight and a melting point of from 70 to 145°C, preferably 80 to 105°C for MPP copolymer and preferably 105 to 120°C for an MPP homopolymer, and provides excellent penetration into TPO or polyolefin substrates.